TOBACCO INDUSTRY RESEARCH COMMITTEE
150 EAST FORTY SECOND STREET NEW YORK 17, N. Y.

#191

Application For Research Grant

Date: January 22, 1958

1. Name of Investigator: M. Powell Lawton, Ph.D., and Alfred E. Goldman, Ph.D.

2. Title: A prospective and retrospective study of the psychophysiological correlates of smoking.

3. Institution & Address:

4. Project or Subject:

The motivation of smoking has received much speculation but too little scientific exploration. Our approach to this problem conceives of the smoking habit as satisfying certain physiological, psychological and social needs of the organism. The nature of some of these needs have been suggested, in part, by prior investigations. These findings, however, are based on post hoc analyses of the data and demand replication before reliability and generalization can be assumed. This study endeavors to subject the hypotheses provided by previous investigations to precise experimental test. More specifically, we propose to predict future smoking behavior of a group of high school students (over)

5. Detailed Plan of Procedure (Use reverse side if additional space is needed):

Census data indicates that by age 19 years 45.3% of men have already started smoking. Since we are concerned here with prospective data it seems appropriate to limit study to male subjects in their 15th year. To reduce problems relating to sample selection it is proposed to use the entire 10th grade parameter (N = approximately 50).

A series of physiological, psychological and sociological devices will be administered during the tenth school year. Two years later each subject's smoking habits will be investigated by personal interview.

The measurement instruments given below are designed to yield data pertinent to the following spheres of inquiry.

A. Intra-personal

1. Anxiety and tension. Previous work by Matarazzo, and Lawton and Phillips, has suggested that anxiety may be a distinguishing characteristic between smokers and non-smokers. The following measures are designed to reflect gross bodily or subjectively experienced anxiety.

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4. (cont'd.) on the basis of factors suggested by prior research. Further, we seek to generate new hypotheses through retrospective analysis of the data.

5. (cont'd.)
   a. Steadiness test
   b. Reflex activity
   c. Skin conductivity
   d. Blood pressure (change in)
   e. Taylor Anxiety Scale (manifest conscious anxiety)
   f. Rorschach Indices: Texture, m (unconscious anxiety)
   g. Rating of motoric intensity (gross motility level)
   h. Adjective check list

2. Impulse expression - control. McArthur and Sommers have suggested some tendency to behavioral expression of impulses among smokers. Self-ratings and laboratory motor indices have been used with success in measuring this item.
   a. Rorschach M (cognitive inhibition)
   b. Motor inhibition task
   c. Hostility manifest expression of)
   d. Muscular pressure

3. Dependency needs. McArthur, Matarazzo, Lawton and Phillips, and Jones have all suggested that dependency needs may be important in the determination of compulsive smoking habits. Therefore, empirical measures derived from questionnaire, self-rating and Rorschach indices will be used in an attempt to differentiate the groups. In addition, data on early feeding will be sought from the mothers of the subjects as a further test of McArthur's findings regarding breast feeding.
   a. Dependency Scale; adjective checklist
   b. Rorschach Indices of dependency

4. Developmental level. All three factors mentioned above: anxiety, impulsiveness, and dependency are thought to reflect a more primitive level of psychological maturity, and suggest that a general index of developmental level may be related with the adoption of smoking. With the genetic system of scoring the Rorschach, recent research has provided a valid, reliable, and objective method of assessing psychological maturity.
   a. Genetic scoring; index of integration
   b. Genetic scoring; index of primitive thought

5. Achievement and intelligence. Matarazzo found no IQ differences between smokers and non-smokers. However, census data indicating greater incidence of smoking in lower economic groups might suggest a possible differential rate referrable to IQ. Accordingly, school IQ measurements, school grades, and various indices of socioeconomic status will be used to discriminate smokers from non-smokers.

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a. I.Q. (California Mental Maturity)
b. Grades

6. Physical strength. Height, weight and grip strength have been previously related to smoking behavior. They will be repeat for confirmation of the prior studies.
   a. Weight
   b. Grip strength

B. Interpersonal

1. Status needs. It is hypothesized that the initiation of smoking may be a compensatory phenomenon related to status needs of the individual. Therefore, the relationship of various indices of peer acceptance and leadership to eventual smoking behavior will be studied.
   a. Athletic accomplishments
   b. School extracurricular activities
   c. Sociometric rating
   d. Sociability index
   e. Hollingshead Index of Socio-economic Status

2. Attitudes. Because no prospective studies of the determinants of smoking have been done, nothing is known about the effect of specific attitudes to smoking on eventual smoking behavior. Accordingly, questionnaire items relating to smoking specifically, and to related attitudes, will be given.
   a. Parents' smoking habits
   b. Attitudes to smoking and people who smoke
   c. Attitudes to drinking, gambling, rock-and-roll, sex
   d. Asceticism - hedonism attitudes
   e. Religious attitudes

6. Budget plan:

Personnel:		1st Year		3rd Year
Professional (2)	@ $1,500.	$ 3,000.	(2)	$3,000.
Consultants		300.		300.
Technician (2, ½ time)	@ 3,000.	6,000.	(1, ½ time)	3,000.
Secretary-Clerk				500.
Expendable Supplies		200.		100.
Permanent Equipment		300.		
Overhead @ 6% of total		583.		494.
Electronic Data Processing				1,000.
Annual total		$10,383.		$8,394.

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6. Budget Plan:

(See attached sheet)

Salaries	_____
Expendable Supplies	_____
Permanent Equipment	_____
Overhead	_____
Other	_____
Total	_____

7. Anticipated Duration of Work:

Two work years. First year - data collection; third year - data analysis. For the second year no funds are requested.

8. Facilities and Staff Available:

M. Powell Lawton, Ph.D.
Alfred E. Goldman, Ph.D.

A resource for technicians and consultants is the University of Pennsylvania, and Temple and Jefferson Medical Colleges.

9. Additional Requirements: None

10. Additional Information (Including relation of work to other projects and other sources of supply): None

Signature /s./ M. Powell Lawton
Director of Project

Business Officer of the Institution

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